ASPHALT INSTITUTE *Quarterly*

JANUARY, 1957

THE TURNER TURNPIKE

TWO ROADS

HEAVY DUTY HIGHWAYS with HOT MIX ASPHALT

ASPHALT IN HYDRAULICS

Asphalt– The Magic Carpet

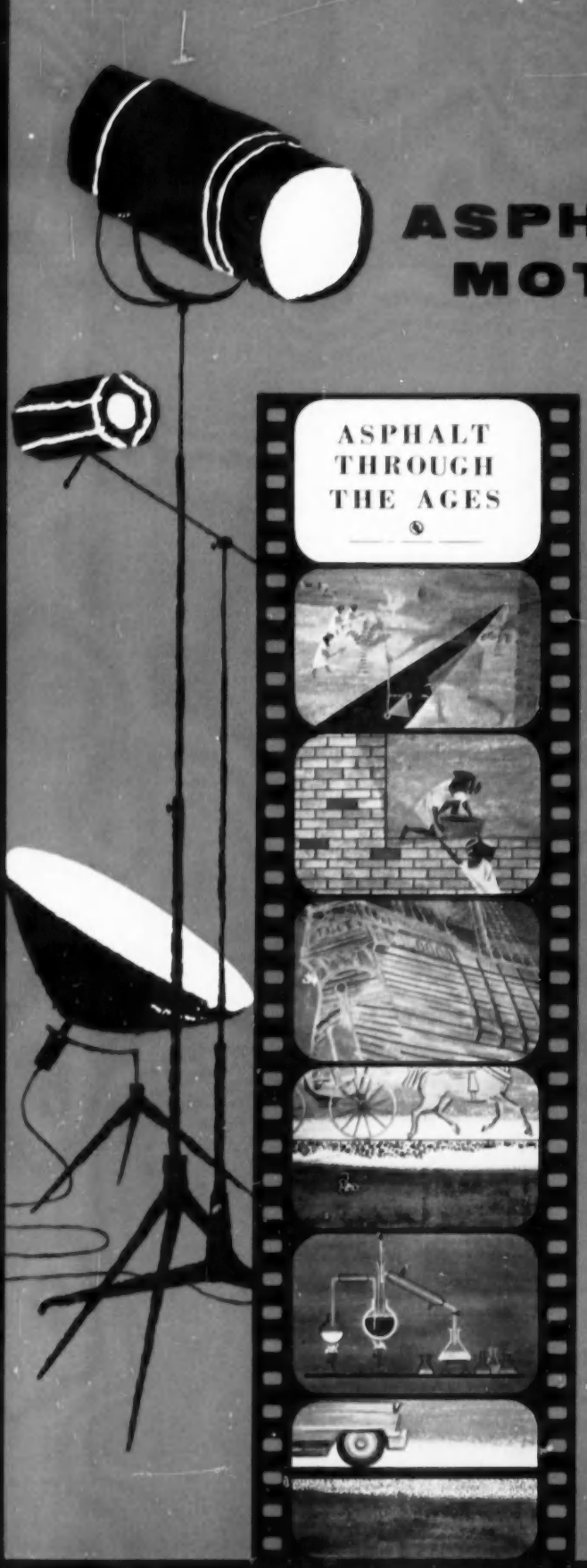
THE *Garden State* PARKWAY

THE NEW JERSEY TURNPIKE

SEAL COATS

ASPHALT INSTITUTE MOTION PICTURES

All Produced in 16mm, Color and Sound



ASPHALT THROUGH THE AGES This major Asphalt Institute production will be ready for release in March, 1957. A documentary that traces history of asphalt from ancient times to the present. Depicts the many modern uses of this miracle construction material, with special emphasis on road paving. Methods of refining asphalt from crude petroleum are simply explained. Length: 486 feet. Running time: 13½ minutes.

TWO ROADS The fascinating story of how two roads, one paved with asphalt, the other with concrete, were built and how they are serving the motoring public. Prepared especially for television showing and for presentation to businessmen's clubs, non-engineering groups and the general public. Length: 502 feet. Running time: 14 minutes.

ASPHALT—THE MAGIC CARPET Tells non-technical story of advantages of asphalt pavement construction through medium of actual present-day American Town Meeting on Long Island. Laboratory demonstrations of asphalt's physical properties. An introduction to asphalt for the general public. Length: 940 feet. Running time: 26 minutes.

SEAL COATS Methods and procedures for applying asphalt seal coats and light surface treatments. Length: 590 feet. Running time: 16½ minutes.

THE GARDEN STATE (NEW JERSEY) PARKWAY Story of asphalt construction on this beautiful 165-mile parkway that serves New Jersey's popular shoreline resorts. Length: 516 feet. Running time: 14½ minutes.

THE NEW JERSEY TURNPIKE Construction of this famed superhighway from foundation to finished asphalt pavement. Length: 726 feet. Running time: 20 minutes. Tag ending describing the widening to six lanes of 61 miles of the Turnpike is also available. Length: 146 feet. Running time: 4 minutes.

THE TURNER (OKLAHOMA) TURNPIKE Procedures employed in constructing Oklahoma's 88-mile, heavy-duty asphalt toll highway. Length: 875 feet. Running time: 25 minutes.

HEAVY-DUTY HIGHWAYS WITH HOT-MIX ASPHALT Heavy-duty asphalt highway construction in the U.S. Shows how materials are obtained and assembled, with complete asphalt plant operation. Length: 865 feet. Running time: 24 minutes.

ASPHALT IN HYDRAULICS How asphalt is used to pave and protect such hydraulic installations as dams and dikes, canals, reservoirs, jetties, groins. Shows equipment and construction methods employed. Newly revised. Length: 800 feet. Running time: 22 minutes.

These Asphalt Institute films are available on a loan basis or they may be purchased. Inquire at your nearest Asphalt Institute office (see list on page 15) for full information.

ASPHALTOPICS

"See you at the Road Show." This has been the by-word of the construction industry for the past several months. The sponsoring American Road Builders' Association promises the biggest display of construction equipment, materials and services ever assembled anywhere—in keeping with our country's gigantic new road program. The place: Chicago's International Amphitheatre. The dates: January 28 to February 2, 1957. The Asphalt Institute will be there. Will you? If so, we hope you'll drop around to see us at our booth in the Materials and Services section.

Talk about the Solid South. Asphalt has its own "Solid North"—the upper tier of New England states. In the last decade the four Yankee states of Massachusetts, Maine, New Hampshire and Vermont have built a total of only 25 miles of slab-type roads. In the same period the existing mileage of this type of pavement in these four states has shrunk by 601 miles while the mileage of heavy-duty asphalt paving has soared from 2,133 miles to 4,321 miles.

Taking recognition of reports that the 85th Congress may inquire again into the capacity of American industry to supply necessary materials for the country's expanded road program, the Board of Directors of the Asphalt Institute at its annual meeting, December 6, 1956, reaffirmed its 1955 statement that the industry is entirely capable of meeting any demands for paving asphalts imposed by that program.

A salute to the asphalt-paved New Jersey Turnpike! In the New Jersey County Government magazine for November appeared this accolade: "The engineers were correct when they guaranteed the performance of the flexible pavement for at least 35 years under heavy traffic. Translating the life-term of pavement as measured on the basis of original engineering estimates into the reality of actual usage as measured by current traffic patterns, it would appear that the pavement on the New Jersey Turnpike has already performed to the extent of 34 out of the 35 years predicted as its expected life-use.

"Today the Turnpike pavement is structurally sound and while the Turnpike has induced traffic volume far in excess of the original estimate, this condition has not caused any increase in the maintenance costs of the essential highway components such as the pavement or bridges . . ."

Well, another winter is here, but folks in the snow belt don't have to worry about damage to their asphalt roads by ice-melting salts. These chemicals just don't harm asphalt pavements as they do other types, causing them to scale and pit. Snow and ice melt faster, too, on asphalt.

ASPHALT PAVES OUR FINEST HIGHWAYS

ASPHALT INSTITUTE Quarterly

Vol. 9, No. 1, January, 1957

EDITOR
Richard C. Dresser

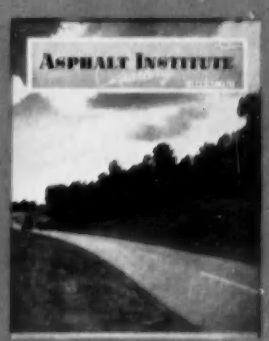
Contents

	PAGE
Florida's Sunshine State Parkway	4
Heavy-Duty Asphalt, the Modern Pavement, Surfaces California's Ben Ali Freeway	8
Asphalt Highway Helps Relieve Louisville Congestion	11
The Kansas Turnpike Opens!	12
A Short Stretch of Highway—Long on Economy and Performance	13
An Asphalt Institute Personality R. O. Wilson Chairman of the Board for 1957	14
William H. Rhodes Retires	14
Members and Offices of The Asphalt Institute	15

Cover

U. S. Route 1 runs the length of the east coast between Fort Kent, Maine, and Key West, Florida, some 2,250 miles. Within this distance are some very fine stretches of road as well as some narrow, rough, obsolete portions requiring modernization. Pictured here is an excellent section of the route, between Aiken and Augusta, South Carolina, its dual roadways made safe, durable and smooth-riding by modern asphalt pavement.

Photo: South Carolina Highway Department



The Asphalt Institute Quarterly is published by The Asphalt Institute, an international, nonprofit association sponsored by members of the asphalt industry to serve both users and producers of asphaltic materials through programs of engineering, research and education.

The Member Companies of the Institute, who have made possible the publication of this magazine, are listed on page 15.

Articles may be reprinted with credit line. Correspondence should be addressed to the Asphalt Institute Quarterly, Asphalt Institute Building, University of Maryland, College Park, Maryland.

Florida's

TALLAHASSEE
JACKSONVILLE
ST. AUGUSTINE
MARINELAND
GAINESVILLE
OCALA
DAYTONA BEACH
LAKELAND
MELBOURNE
TAMPA
ST. PETERSBURG
VERO BEACH
FORT PIERCE
STUART
LAKE OKEECHOBEE
WEST PALM BEACH
FORT MYERS
DELRAY BEACH
POMPANO BEACH
FORT LAUDERDALE
HOLLYWOOD
MIAMI

Signs like this are a familiar sight to long-haul travelers on Florida's jammed U.S. 1. New 110-mile Parkway is expected to ease state's traffic congestion problem.

PROJECT I (Scheduled opening: January 1, 1957)
PROJECT II (Completion expected: Fall, 1958)
INTERCHANGE
TOLL PLAZA
SERVICE AREA

Sunshine State Parkway

110 Miles of Smooth, Safe Driving on MODERN ASPHALT PAVEMENT

WITH construction costs running way below engineering estimates and vacation-bound Florida traffic starting the climb toward its winter peak, highway contractors, as this was written, were putting the finishing touches on the "bobtailed" Miami-Fort Pierce section of the Sunshine State Parkway. This new 110-mile stretch, Project I of a toll superhighway that will eventually cover the 388 miles between Miami and a point fifteen miles north of Jacksonville, is scheduled to open its divided, asphalt-paved roadways on or about New Year's day, 1957.

Florida has needed a high-speed, limited-access expressway like this for a long time. Most existing routes in the state for years have been carrying traffic far in excess of their capacity. On U. S. Route 1, which serves the famed east coast resorts, there are an estimated 200 stoplights between Miami and Jacksonville—an average of one every mile and three quarters for 347 miles. Such a situation could only mean mounting traffic accidents and fatalities and—as motorists and truckers will readily attest—intolerable, nerve-shattering congestion.

With Florida experiencing a population growth of 86.2% during the past decade, the state has had a mammoth traffic problem on its hands. In 1955 Florida had 1,765,711 registered vehicles, an increase of 11 percent over 1954. Further increases in 1956 were also predicted. When state officials added to these totals the hundreds of thousands of out-of-state cars bearing vacation-bound tourists during the state's booming winter season, they realized their dilemma had only one solution—the construction of a four-lane divided highway, free of bottlenecks, from one end of the state to the other.

The Florida Turnpike Authority, created by the state legislature in 1953 and empowered to build such a road, took office in early 1954. Detailed engineering surveys conducted during the year established the turnpike's inland route, so selected because of low-cost land and close-at-hand deposits of limestone for the base course of the roadways. The cost of building the highway was figured at $74 million and in July 1955 the Authority sold revenue bonds totaling that amount.

BARGAIN SUPERHIGHWAY

What the Authority didn't know then was that the Sunshine State Parkway was destined to become, as Authority Chief Engineer Sam P. Turnbull has since put it, "the biggest turnpike bargain in the nation." Savings in contract bids and other effected economies have put the overall cost of the project about 20% under the original $74 million estimate. This makes the per-mile cost of the Miami-Fort Pierce section approximately $470,000, lowest of any major turnpike in the nation. To consider that this saving is being achieved on a right-of-way that skirts treacherous Everglades swamps and has required the building of 87 bridges to span rivers, railroads, side roads and canals, makes this unusually low construction cost all the more remarkable.

The Florida terrain required construction of an embankment-type roadbed. The soil types which prevail throughout most of the state provided an excellent embankment fill. To aid subsequent stabilization and compaction, the various soil types were mixed when dumped on the roadway, then given a second mixing as piles of earthfill were picked up and moved to other areas. A final mixing occurred when the materials were spread on the roadway. Much of this fill was scooped from canals along the right-of-way, enlarging them to assure nearby farms a greater supply of water for irrigation and more efficient drainage during the rainy season.

This subgrade condition obviously called for a flexible pavement, one that would "give"—not crack and break up—when its foundation receded or settled slightly under the pounding of heavy traffic loads. Engineers assigned to the project without hesitation recommended heavy-duty asphaltic concrete as the only practical material to use in paving the turnpike.

CONSTRUCTION SPEED

Work began in July 1955 with the tremendous task of excavating, filling and spreading 14 million cubic yards of fill dirt over the entire length of the project. The Florida weatherman, famed for his predictions of almost continuous sunshine, smiled on all operations. Nine months later the first of several paving contracts was awarded and, after completion of the limerock base construction, successful bidders began setting up their portable asphalt plants and stockpiling paving materials. Paving operations started in August 1956, and at this writing, contractors are winding up the job of laying the 2½-inch asphaltic concrete surface. Only a

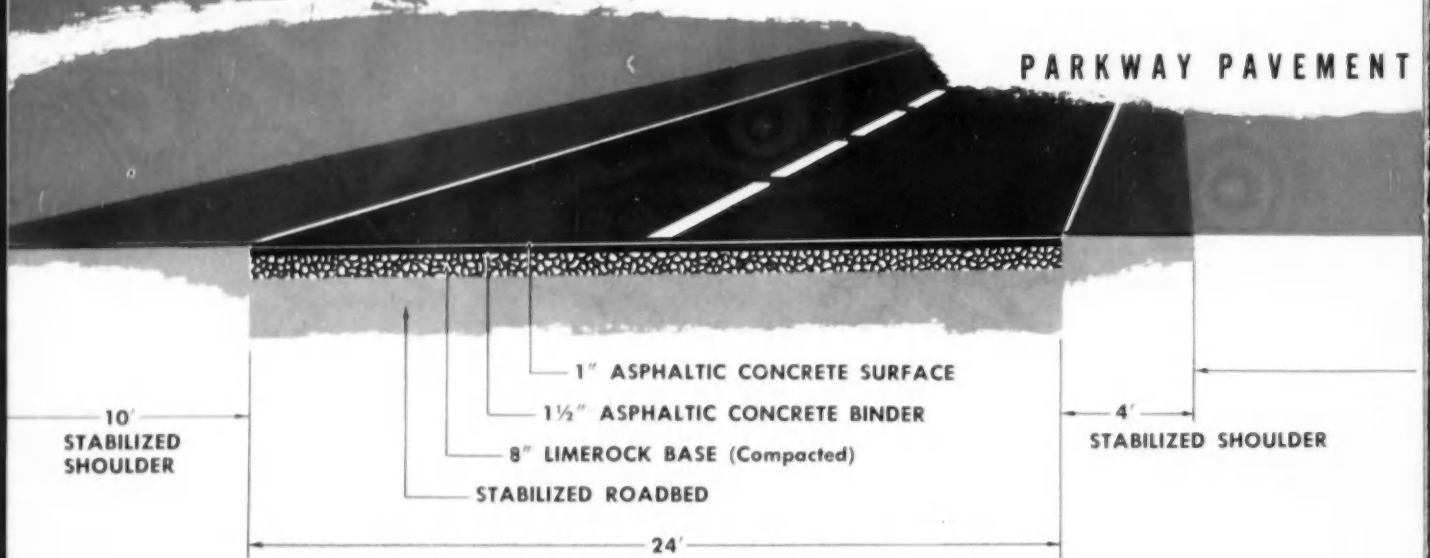
year and a half after breaking ground, the 110-mile route is complete and ready for traffic.

In any type of road-building, but particularly in toll road construction, speed of construction pays high dividends. The sooner work is completed, the sooner do toll-paying vehicles bring in needed revenue to start retiring the bonds. That the Miami-Fort Pierce toll road was completed with such lightning rapidity attests to the ingenuity and ability of the engineers, officials and contractors who accomplished the feat. True, the Florida climate, which permits year-round construction, lent a valuable assist. During paving operations, hardly a day has been lost due to inclement weather. But it is also true that selection of modern asphalt pavement assured the quickest and easiest surfacing job possible. The Turnpike Authority specified that contractors for the surfacing operations have portable asphalt plants, stockpiles of materials, or a siding where supplies of 100 tons an hour of surfacing materials could be maintained to insure paving at least a mile a week and up to four miles a week. It is reported that some contractors are even beating this schedule and are laying four lanes of asphalt at the rate of six miles a week.

Officials could also point to the savings effected by asphalt paving in keeping overall construction costs down. The decision to use asphalt meant that the fairly soft limerock, available in ample supply along the right-of-way, could be used for the turnpike's 8-inch base course, cutting hauling costs to a minimum. Only with asphalt pavement can such employment of inexpensive local materials be made, with no sacrifice to the ruggedness and long-lasting qualities which the asphalt surface imparts to the entire pavement structure by means of its superior bonding and waterproofing characteristics. In addition to noting the engineering advantages to be gained by using asphalt, the engineers specifically recommended it on the basis of its proven economy of construction and maintenance. The Authority wisely accepted their recommendation.

SAFETY AND COMFORT

Combining the best features of other major operating toll roads, the Parkway promises the passenger car motorist and



trucker the ultimate in driving comfort and safety. Lavish restaurant and service areas, spaced about thirty miles apart and built between divergent roadways, are accessible to both North and Southbound traffic. The ten-foot outside shoulder provides ample room for emergency parking, while the four-foot inside shoulder allows extra room for passing in tight situations. Curves are gentle. Acceleration and deceleration lanes, all asphalt paved, have been carefully engineered for smooth, safe access to and exit from the high-speed roadways.

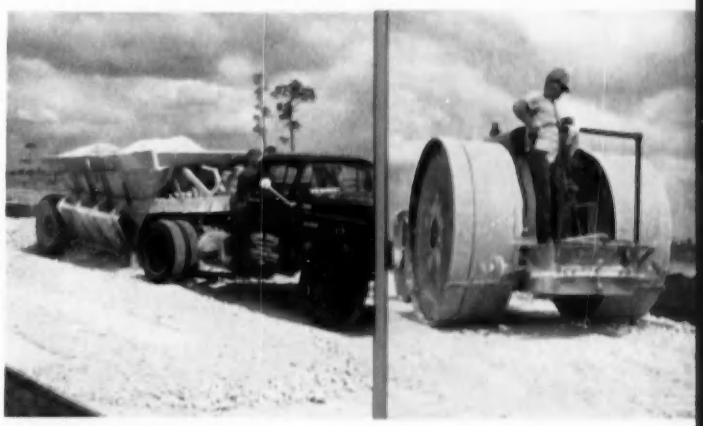
Safety has also been engineered into the pavement itself. The textured surface of the asphalt is designed to resist skidding and bring vehicles to a sure, safe stop in dry or wet weather. The darkness of asphalt pavement is another big safety factor. It not only provides sharp contrast to indispensable traffic lane markings but also affords the motorist freedom from tiring eyestrain. The modern asphalt highway, in fact, has been called "the road with the built-in sunglasses," a description that aptly fits this new parkway in a state where sunglasses are standard accessories to nearly everyone's wardrobe.

SMOOTH DRIVING

Probably the one feature of heavy-duty asphalt pavement that pleases the highspeed, long-haul motorist most is its velvet smoothness. The driver entering the Sunshine State Parkway can look forward to a 110-mile continuous ribbon of dark, rugged, seamless pavement that makes for the most comfortable and refreshing ride known. Truckers who have been fighting traffic on obsolete Florida roads for years will find the turnpike an especially welcome relief. The state's trucking industry anticipates sizeable reductions not only in maintenance costs and gasoline consumption but also in that important hidden liability, driver fatigue.

Despite the passage of the Federal Aid Highway Act of 1956, which has made available to all states billions of dollars for road-building, it appears now that Florida will finish up the remaining 279 miles of the Parkway with toll financing. Target date for completion of the double-barreled facility is mid-1958. The engineers have recommended asphalt paving all the way.

Construction began in July, 1955. Here vibrating tamper compacts earthfill in embankment-type roadway foundation.

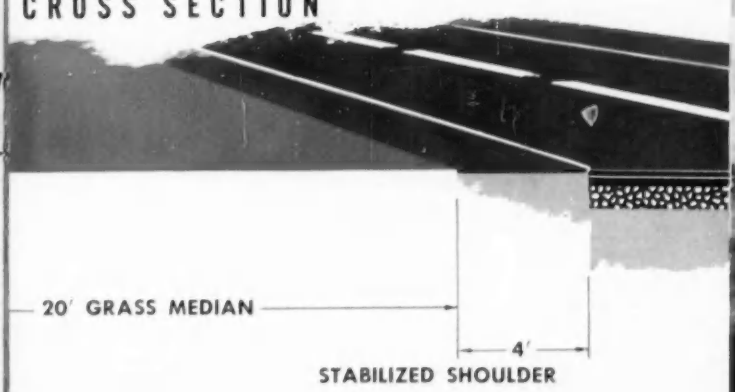


Dumping and compacting limerock on north roadway. This material provides excellent base for asphaltic concrete surface.

Applying 2½" of modern asphalt pavement on southbound lanes north of Palm Beach interchange. Paving is quick, easy, low cost.

NT

CROSS SECTION



HEAVY-

The tw
Freeway
country

Paving machines place the continuous, joint-free asphalt pavement surface, tremendously durable and highly resistant to skidding.

AVY-DUTY ASPHALT, THE MODERN PAVEMENT

Surfaces California's Ben Ali Freeway

"ONE of the smoothest roads I've ever driven on." That's what folks are saying about the new, four-lane superhighway between Sacramento and Roseville, known to Californians as the Ben Ali Freeway. This big, sweeping, heavy-duty road, built to relieve one of the worst bottlenecks in the transcontinental highway system, was dedicated and opened for vehicle use on April 24, 1956. Since then, the better than 14,500 drivers a day traveling this 13-mile stretch have been experiencing the thrill of riding on a highway of the most modern design. Modern highway design today means *asphalt design,* and the Freeway's twin roadways are providing for motorists the smooth, comfortable and safe driving they have come to associate with the altogether superior paving material with which the lanes are surfaced—modern, heavy-duty asphalt pavement.

INTERSTATE HIGHWAY PROJECT

The Ben Ali Freeway has been designated a portion of the federal-aid Interstate System and as such meets Interstate highway design standards. It also constitutes part of U. S. 40, the major route connecting northern California with Nevada and the east. Thus it carries not only a sizable amount of heavy truck traffic but also a great number of automobiles driven by recreation seekers on their way to or back from the beautiful Sierra-Nevada mountains and their varied resort attractions. In fact, sport fans will have to rely on U. S. 40 for

Paved shoulders strengthen overall pavement and increase safety through added width. Here outside shoulder is sealed with emulsified asphalt (top), then covered with screenings.

The twin asphalt-paved roadways of the Ben Ali Freeway speed travelers through the California countryside between Roseville and Sacramento.

access to Squaw Valley, the appointed site of the Winter Olympic games scheduled for 1960. The Ben Ali Freeway is an important link in this route for those traveling from the west.

Another noteworthy feature of the new highway is that it is one of the largest single asphalt paving contracts ever awarded by the California Division of Highways. Further, it is the largest section of asphalt-paved freeway ever constructed under one contract in that state. The low bidder, Baldwin Contracting Company, used approximately 5,340 tons of paving asphalt, with the hot mix for the entire job totaling about 112,000 tons.

PAVEMENT DESIGN

The pavement for the two 24-foot roadways consists of 3 inches of asphalt hot-mix (i.e., modern asphalt pavement) containing coarse-graded aggregate ranging from 1-inch to very fine material (3-6% passing No. 200 Sieve). This is topped by a ½-inch layer of special open-graded asphalt hot-mix with aggregate ranging in size from ½-inch to very fine (0-3% passing No. 200 Sieve). Base construction varies in different sections of the project. An 8-inch treated stone base placed over a 12-inch untreated layer has been employed in some sections, while in others the thickness of the latter is 3 inches. In still other sections no untreated base was required.

The 3-inch thickness of asphalt hot-mix was placed in two equal layers. In accordance with California's standard procedure, the bottom layer was spread by blade graders having a 15-foot minimum wheel base. Paving machines laid the next 1½-inch layer as well as the ½-inch open-graded surfacing material.

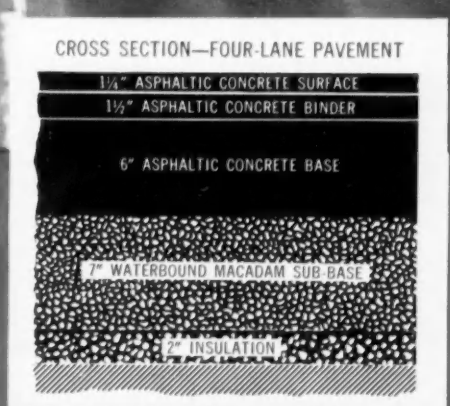
During construction, base material was extended beyond the 24-foot driving lanes to include both inside and outside shoulders, which measure 5 feet and 8 feet in width, respectively. The shoulders were then topped by 3 inches of asphalt hot-mix, followed by application of a rapid-setting emulsified asphalt (RS-2) with a covering of screenings to assure visual contrast with the dark pavement of the driving lanes. The screenings also provide an extra-rough texture that causes the tires of straying vehicles to rumble, thus alerting their drivers. As demonstrated in the famed WASHO Road Test, paved shoulders substantially strengthen the roadway pavement and provide an added measure of safety by increasing the overall pavement width. The depressed median strip, by reason of its 32-foot width (26 feet in some sections), also contributes to driving safety by setting up an effective barrier against the glare of oncoming headlights.

A ROAD OF TOMORROW

The Freeway's rugged pavement construction, together with its other up-to-date features, is typical of what the American motorist will find on many thousands of miles of our nation's roads within the next several years. This fine, modern asphalt highway, and others built before it, can boast records of proved performance unmatched by roads constructed with other pavement types. Heavy-duty asphalt pavement has demonstrated beyond doubt its ability to carry the heaviest loads, under the most adverse conditions of weather and climate, without deteriorating. Asphalt pavements are smoother than any other kind. They're safe. And they cost far less to build and maintain.

The wisdom of engineers who specify modern asphalt paving has been clearly shown, their choice justified. The record book is open for all to see.

Note velvet-smooth, rugged asphalt pavement on this truly modern highway, now carrying better than 14,500 vehicles a day.



Louisville's Henry Watterson Expressway, a modern asphalt highway engineered to take the heaviest traffic loads of today and the future.

ASPHALT HIGHWAY helps relieve Louisville congestion

LIMITED-ACCESS expressways have long proved their worth as effective aids in unsnarling traffic congestion in our cities. New York, Chicago and Los Angeles—to name only our biggest metropolises—have benefited immeasurably from these dynamic, high-speed thoroughfares which permit through travelers the time-saving, congestion-free luxury of by-passing midtown streets. And for out-of-town visitors and tourists, for commuters and shoppers from the suburbs, the expressways provide relatively quick and easy access to and egress from streets that are only a short drive away from downtown stores, offices and hotels.

Kentucky state highway engineers had these things in mind when they planned and built the Henry Watterson Expressway. Skirting the south side of Louisville, this asphalt-paved belt highway extends from U. S. Route 60 in the east to U. S. Route 31W at the city's southwest corner. It is open to both passenger car and truck traffic.

TWELVE MILES OF DURABLE ASPHALT PAVEMENT

The expressway presently consists of a two-lane section approximately four miles long and a four-lane stretch about eight miles in length. The highway department is planning to add another two lanes to the four-mile portion and to

extend the entire project on both east and west ends. The expectation is that six lanes will be built to connect U. S. 60 with U. S. 42 in the east, a 2.25 mile link. The western extension, beginning at U. S. 31W, will head westward and northward about six miles to meet a new bridge, as yet unbuilt, spanning the Ohio River. When the full length of the highway is completed it will afford access to Louisville from at least six interchanges.

Total cost of the heavy-duty asphalt pavement, base and sub-base on the eight-mile, four-lane section was only $1,385,525.35, an average of about $170,000 per mile. Savings like this are usual with modern asphalt construction, a principal reason why economy-minded engineers nearly always insist upon it in highway building. By specifying asphalt pavement they know they are conserving the taxpayer's dollar, saving money they can use to pay for future maintenance (asphalt pavements are usually less costly to maintain than any other type), additional new construction, or rehabilitation and improvement of roads that are fast becoming obsolete under ever-increasing traffic.

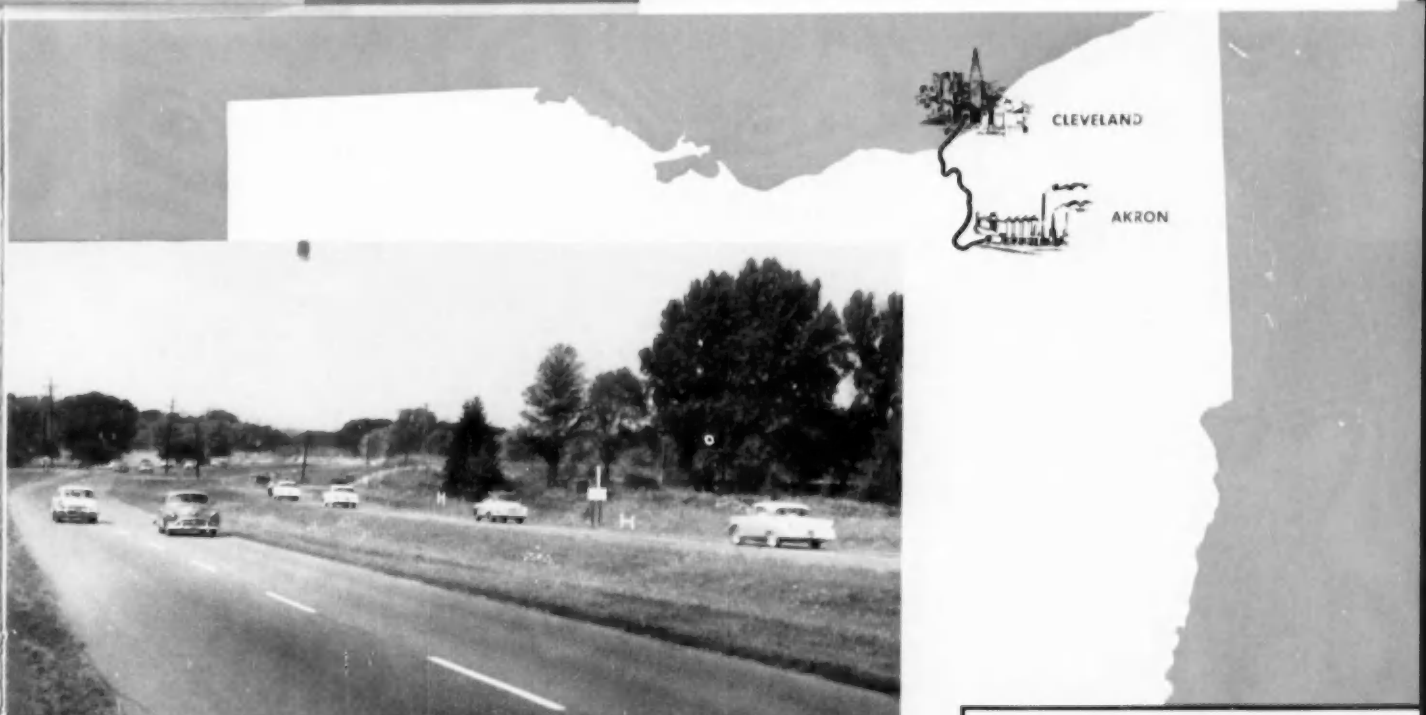
TRAFFIC MAINTAINED DURING CONSTRUCTION

Although surfacing operations were actually completed last August, engineers took advantage of one of the unique features of asphalt construction and opened the road to traffic following completion of the 7" waterbound macadam sub-base course in the Fall of 1955, at the end of the construction season. When paving resumed the next spring, traffic was maintained while the finishing machines laid the heavy-duty asphaltic hot-mix for the 6-inch base course, 1½-inch binder and 1¼-inch surface, one lane at a time. Drivers not only experienced little inconvenience but also could see first-hand how easily and quickly the work was accomplished. Just as important, they could derive full satisfaction from the knowledge that their road construction tax dollars were working for them full time.

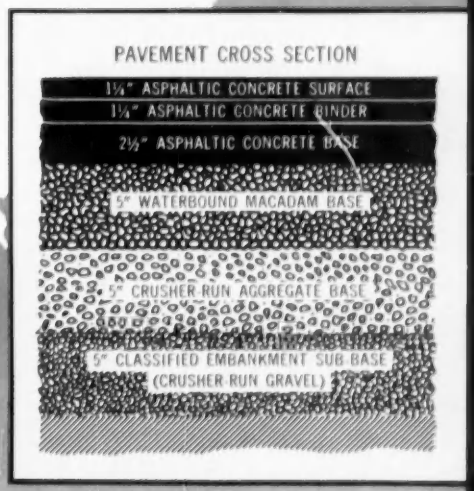
Designed for the heaviest traffic of today and the future, the Watterson Expressway's modern asphalt pavement is giving rugged, dependable service to the thousands of passenger vehicles and trucks that use it every day.

the Kansas Turnpike Opens!

The October 1956 issue of the *Quarterly* carried a four-page feature article describing construction of the 181-mile asphalt-paved section of the Kansas Turnpike. The big four-lane superhighway opened to traffic on October 25, with the accompanying picture taken a few days later. Officials have estimated that 18,000 to 20,000 vehicles will utilize the new highway daily. The modern asphalt pavement extends from Topeka to the Oklahoma border.



The smooth, textured asphalt surface of this seven-mile section of superhighway on Ohio Route 8 gives motorists safe, dependable service.



A Short Stretch of Highway— Long on Economy and Performance

North of Akron, on Ohio Route 8, lies a beautiful stretch of four-lane asphalt highway. Only a little over seven miles long, it nevertheless offers to drivers between the Rubber City and Cleveland an added measure of smooth, enjoyable riding during the 30-mile run.

As State Route 8 is one of the main links connecting these two major industrial cities, it has naturally experienced, along with all other primary routes in the nation, the tremendous increases in traffic since World War II. With statistics showing no sign of a let-up in motor vehicle registrations and with portions of the route becoming decidedly obsolete, the Ohio Highway Department in 1953 felt justified in constructing the seven-mile section. The decision to do so proved a wise one. In June 1956, figures showed the average daily traffic on the four-lane stretch to be more than 13,000 vehicles, including nearly 1,500 trucks. The cars of Akron commuters who don't travel the entire distance to Cleveland constitute a sizable part of this volume.

The highway department called for bids on heavy-duty asphalt construction only, knowing it is always less costly than slab-type paving. Adding to this the other proven advantages of durability, resiliency, smoothness and low maintenance cost, officials of the department also knew they were buying a superior pavement that would serve heavy traffic for years with little attention in the way of surface repair. When repair eventually became necessary, they could be assured of its simple, easy execution without closing up the road and inconveniencing motorists.

The excellent performance of this highway has borne out, as expected, the department's selection of asphalt construction, providing further proof that, under the pounding of the heaviest traffic, modern asphalt pavement can withstand the most severe punishment. Completed over two years ago, its glare-free, textured surface, highly skid resistant for sure traction, is as smooth-riding and safe as the day it was finished. It has required no maintenance at all.

R. O. WILSON
Chairman of the Board
and of the Executive Committee
The Asphalt Institute

Serving as Chairman of The Asphalt Institute's Board of Directors and Executive Committee for 1957 is R. O. Wilson, Manager, Asphalt Division, Cosden Petroleum Corporation, Big Spring, Texas. Born in Memphis, Tennessee, Mr. Wilson attended Carnegie Tech and joined Jones and Laughlin Steel Corporation in 1928. He later served with the Carter-Waters Corporation, Kansas City, Missouri, Cosden Petroleum Corporation, and the old Talco Asphalt Company, now the American Liberty Oil Company, Dallas. His military service during World War II included three years with the U. S. Army Corps of Engineers in Africa and the E.T.O. He returned to the U. S. in 1946 to rejoin Cosden as Asphalt Manager. He is also vice president and a director of Col-Tex Refining Company.

The Outlook for ASPHALT in 1957

By R. O. Wilson

Looking back on a year of sound expansion for the Institute, it is dangerously easy to slip into a trough of comfortable complacency. We have seen another record set in asphalt sales volume, the fifth in as many years. With the great Federal road program beginning to gather momentum we are in the happy predicament of being concerned only with meeting the market demands for paving asphalts.

But complacency is a luxury we can least afford. The year 1957 will be a year of critical decision. In a blizzard of Federal dollars, to the extent of 90% of the cost of Interstate roads, the men charged with the responsibility of building the nation's new "dream highways" may be tempted to forget the basic economies of asphalt paving.

I do not necessarily regard this as a matter for real concern. Indeed, I believe the Institute should be prepared to welcome the new challenge. Some of us may have permitted this recognized economic advantage of asphalt paving to distort our promotional efforts.

Modern asphalt pavements have proved themselves equal or superior to any other type in rugged durability, safety and comfort. They are winning increasing engineering respect on these terms. It is a happy development.

Fortunately, we are in a strong position to move forward on this new ground. More than 700 miles of asphalt-paved toll roads are, without exception, proving financially and structurally sound. Within the last two months, 181 miles of asphalt-paved turnpike in Kansas were opened to traffic. This month (January) another 110 miles of asphalt-paved toll road will open in Florida. And nearing completion is the 123-mile Massachusetts Turnpike. Another 224 miles are being built in New Hampshire, Connecticut, Oklahoma and Virginia.

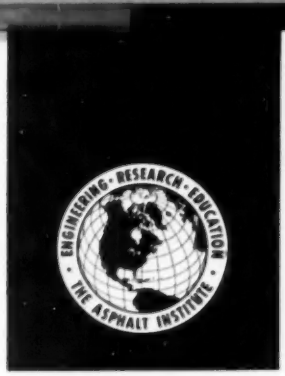
By the end of 1957 more than 1,000 miles of asphalt-paved turnpikes will be in existence, documenting the fact that heavy-duty asphalt paving offers considerably more to the engineer and highway official than a saving in construction dollars.

It has been proved, in the last ten years, that a well-designed and carefully-built asphalt pavement can meet the sternest test of modern wheeled traffic. We can draw added satisfaction from the knowledge that the best asphalt pavement has yet to be designed and built.

Continued development and improvement in pavement design can be expected. The future of road-building belongs to the asphalt pavement, but we must earn it.

William H. Rhodes, New Orleans District Engineer, Retires

Real retirement to a life of less arduous responsibility is an event which unfortunately occurs only once during our span on this planet. William H. Rhodes —"Dusty" to most of his friends and associates—entered that take-it-easy existence last fall after ably serving as Institute District Engineer at New Orleans for the past six years. Respected and admired as a fine engineer and regarded as a devoted friend by all who know him, Mr. Rhodes' outstanding accomplishments in highway engineering during his distinguished career will long stand as a model for those who would enter the asphalt engineering profession. The *Quarterly* takes pride in announcing his retirement and extends to him best wishes and years of happiness and good health.



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